

CLAIMS

1. A vehicle chassis comprising two longitudinal side rails (10, 12) each having a central portion (10a, 12a) and a front portion (10b, 12b), a first cross member (14) extending in a transverse direction between the side rails and a second cross member (20) extending in a transverse direction between the central portions of the side rails, wherein the chassis further comprises two secondary longitudinal members (22, 24) extending between the first cross member (14) and the second cross member (20), and the secondary longitudinal members are each connected to the side rails by means of a central support section (28, 30) which is longitudinally spaced between the first and second cross members, characterized in that the front portions (10b, 12b) are arranged in use to be higher than the central portions (10a, 12a) and the first cross member (14) extends between the front ends (10d, 12d) of the side rails and is arranged to be, in use, below the front ends (10d, 12d) of the side rails over a substantial part of its length.
2. A chassis according to claim 1 wherein the first cross member (14) is connected to the side rails (10, 12) by means of vertically extending front support sections (16, 18).
3. A chassis according to either foregoing claim wherein the secondary longitudinal members (22, 24) are connected to the first cross member (14) at respective connection points which are lower than the front ends (10d, 12d) of the side rails.
4. A chassis according to any foregoing claim wherein each of the secondary longitudinal members (22, 24) has a front portion (22d, 24d) which is inclined upwards towards the front.

5. A chassis according to claim 4 wherein the front portion (22d, 24d) is to the front of the central support sections (28, 30).
6. A chassis according to claim 4 or claim 5 wherein each secondary longitudinal member (22, 24) includes a rear portion (22c, 24c) which is substantially horizontal.
7. A chassis according to claim 6 wherein the side rails (10, 12) each include a an inclined portion (10c, 12c) between the central portion (10a, 12a) and the front portion (10b, 12b), and the rear portion (22c, 24c) of each of the secondary longitudinal members is adjacent to one of said inclined portions over at least a substantial part of its length.
8. A chassis according to claim 6 or claim 7 wherein each secondary longitudinal member (22, 24) has a weakened bend (22e, 24e) at the junction between the front (22d, 24d) and rear (22c, 24c) portions to encourage downward bending of the secondary longitudinal member (22, 24) in the event of a frontal impact.
9. A chassis according to any foregoing claim further comprising a third cross member (26) extending in a transverse direction between the secondary longitudinal members (22, 24) at a position longitudinally spaced between the first and second cross members (14, 20).
10. A chassis according to claim 9 wherein the third cross member (26) is approximately level, in the longitudinal direction, with the central support sections (28, 30).
11. A chassis according to any foregoing claim wherein the secondary longitudinal members (22, 24) are positioned below and inboard of the side rails (10, 12).

12. A chassis according to any foregoing claim wherein the central support sections (28, 30) each provide support for a suspension mount (28a, 30a).
- 5 13. A chassis according to claim 12 wherein the suspension mount (28a, 30a) is positioned on the central support section adjacent to one of the secondary longitudinal members (22, 24) so that the secondary longitudinal member provides longitudinal support for the suspension mount.
- 10 14. A chassis according to claim 12 or claim 13 wherein the suspension mount (28a, 30a) is located at a lower end of the central support section.
- 15 15. A chassis according to claim 13 or claim 14 wherein the suspension mount (28a, 30a) is substantially level, in the vertical direction, with the secondary longitudinal members.
- 15 16. A chassis according to any foregoing claim wherein the secondary longitudinal members (22, 24) are connected to the first cross member (14) at respective points inboard of the side rails (10, 12).
- 20 17. A chassis according to any foregoing claim wherein the side rails (10, 12), cross members (14, 20, 26) and secondary longitudinals (22, 24) are bonded together to form a single rigid structure.
18. A chassis according to claim 17 wherein the side rails (10, 12), cross members (14, 20, 26) and secondary longitudinals (22, 24) are welded together.
- 25 19. A chassis according to claim 17 wherein the side rails (10, 12), cross members (14, 20, 26) and secondary longitudinals (22, 24) are bolted together.

20. A chassis according to any foregoing claim further comprising a recovery attachment (42) attached to the first cross member (14).
21. A chassis according to claim 20 wherein the recovery attachment (42) is attached to substantially the mid point of the first cross member (14).
22. A chassis according to claim 21 wherein the recovery attachment (42) is inclined downwards towards the front.
23. A vehicle chassis substantially as hereinbefore described with reference to the accompanying drawings.
24. A vehicle including a chassis according to any foregoing claim and a body mounted on the chassis.